

**REMARKS**

Claims 1-23 are pending in this application. Claims 1, 11, 21, 22 and 23 are the independent claims and have been amended to further clarify the invention. No new matter is introduced.

Claims 1-5 and 21-24 have been rejected under 35 U.S.C. § 103 as being unpatentable over EUROEXPERT - Best Practices: French Social Security - UNEDIC dated 1992 in view of IEEE article "An Introduction to Six Sigma with a Design Example" by Robert White dated 1992.

Briefly, the present invention is directed to the top-down, from "scratch" designing of the architecture of an information system (system architecture). That is, the present invention provides a software tool for enabling a system engineer to create an initial system architecture design and to test (more at predict) performance of that design. Further the present invention performs "what-if" scenarios and determines changes in performance in variations of the proposed design.

In a preferred embodiment the present invention software tool employs a multi-layer mathematical model of the proposed system architecture. The mathematical model is based on a business process design which describes business processes and defines business requirements for each business process. The multi-layer mathematical model includes a business layer, an application layer and a technology layer. The present invention provides model performance metrics at each of these layers and compares model performance metrics with the business requirements. Where unacceptable performance metrics exist, the present invention enables the proposed system architecture to be modified and updates the performance metrics at each layer. If the performance metrics satisfy the business requirements, then the present invention provides an output description of the proposed system architecture.

The EUROEXPERT cited reference is directed to analyzing and upgrading an existing system in a bottom-up approach which is in stark contrast to the top-down designing of a proposed system architecture in the present invention. That is, EUROEXPERT analyzes measured performance of an existing system. In viewing the ordinary flow of the EUROEXPERT process, first data and measurements are collected and then a model is formed. In contrast, Applicant's present invention as now claimed first forms a model and then generates for analysis predicted or projected performance metrics of a proposed (not in existence) system architecture.

Further in the context of the cited reference, the term "new architecture" is a re-engineering or re-designing of a part of the existing information system. This is stated throughout the EUROEXPERT reference, such as on page 1, column 2, last sentence; page 2, column 2, top diagram; and page 2, column 1, "Phase 2 - Implementing the Solution" Section. To make this distinction in terms of structure of the present invention, the claims now recite

"...said constructing and modeling being in a manner uninfluenced by a prior existing related system architecture and measured performance thereof;..."

This language or similar claim language is in base Claims 1, 11 and 21-23 as now amended. Support for the claim amendments is found throughout the Specification such as at page 3, line 19 - page 4, line 16 as originally filed. Further, MPEP § 2173.05(i) allows a claim limitation to exclude characteristics of the prior art, and does not require a literal basis in the specification for the negating limitation. MPEP § 2163 I.B. allows newly added claim limitations to be supported in the specification through express, explicit or inherent disclosure which is the case here. No new matter is introduced. Accordingly, the present invention as recited in base claims 1, 11 and 21-23 as now amended is believed to be patentably distinguished over the cited and prior art.

With respect to the cited IEEE article by Robert White, the article is directed to industrial design for electronic circuits in the manufacturing of circuit boards. This industrial design for electronics is in contrast to the system architecture designing of the present invention. White is directed to a discrete event approach whereas the present invention considers the continuous service of the proposed system architecture and predicts performance thereof. That is, White is incapable of considering continuous service and predicting performance thereof as claimed by the present invention and as such is patentably distinguished.

Further, White discloses using Six Sigma to eliminate defects from one's product (White, p. 28, col. 1, last ¶). White goes on to say that, in order to be effective, a manufacturer needs to achieve quality products (White, p. 28, col. 2, second full ¶). In order to achieve an effective level of quality, it requires a capital investment in training, in process equipment, in developing partnerships with customers and suppliers (White, p. 28, col. 2, third full ¶). Furthermore, a company has to "make the commitment at all levels to a total quality management program. It takes time, years even, to fully implement." In contrast, the present invention as claimed uses "performance metrics with the set of business requirements for each business process..." The performance metrics are done without the need for training, process equipment or developing partnerships with customers and suppliers. Rather, the present invention as claimed is computer

implemented. That is, White's article is a "way of doing business" rather than a computer implemented method and system.

Thus, White applied to EUROEXPERT at best provides a six sigma way of doing business incorporating re-designing/re-engineering of a subject existing information system. No combination of White and EUROEXPERT imply, suggest or make obvious the claimed process or system for designing a system architecture using a multi-layer mathematical model of the proposed system architecture and modeling performance metrics for each layer of the multi-layer model of the proposed system architecture including modeling continuous service of the proposed system architecture as now claimed in each of the base Claims 1, 11, 21, 22 and 23.

The foregoing patentable distinctions of the present invention over the cited references are found in now amended base Claims 1, 11 and 21-23 with the language, or similar language, of

"A computer implemented process for designing a computer model based system architecture, comprising...a multi-layer mathematical model of a proposed system architecture...the multi-layer mathematical model being implemented on a computer and the layers of the multi-layer model comprising a business layer, an application layer and a technology layer;...modeling performance metrics for each layer of the multi-layer model of the proposed system architecture including continuous service of the proposed system architecture, said constructing and modeling being in a manner uninfluenced by a prior existing related system architecture and measured performance thereof..."

Claims 2-5 are dependent on Claim 1 and thus inherit this claim language and Claim 24 is cancelled. Thus, the § 103 rejection of Claims 1-5 and 21-24 in view of EUROEXPERT and White is believed to be overcome. Acceptance is respectfully requested.

Claims 6-20 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over EUROEXPERT and the IEEE article by White in further view of U.S. Patent No. 6,532,465 issued to Hartley.

Claims 6-10 are dependent on base Claim 1 and Claims 12-20 are dependent on base Claim 11. Thus the foregoing arguments also apply here.

Hartley, a computational system for operating on client defined rules, does not add to EUROEXPERT and White the performance prediction of a proposed system architecture including modeling continuous service as now claimed in the present invention. Further, Hartley does not disclose the use of a multi-layer mathematical model of proposed system architectures in contrast to the present invention as claimed. In the present invention multilayer mathematical model, each layer holds and represents different data. In particular, the business layer holds the

business process design, the application layer includes software component models and the technology layer includes hardware component models.

In contrast, Hartley discloses the same data but at different levels of abstraction. The data at one level of abstraction is represented by presentation objects and at a different level of abstraction is represented by corresponding business objects, and so forth. Col. 5, lines 12-25. Such levels of abstraction are not the same as the present invention multi-layer mathematical model representing different data at each layer.

In support of the foregoing arguments the base Claims 1 and 11 as now amended recite "...a multi-layer mathematical model of a proposed system architecture...modeling performance metrics for each layer of the multi-layer model of the proposed system architecture including continuous service...,said constructing and modeling being in a manner uninfluenced by a prior existing related system architecture..." (Claim 1) and

"...a multi-layer mathematical model of a proposed system architecture supporting the business process design...the performance modeling module modeling performance metrics for each layer of the multi-layer model of the proposed system architecture including continuous service...,said constructing and modeling being in a manner uninfluenced by a prior existing related system architecture..." (Claim 11).

Claims 6-10 depend on base Claim 1 and thus inherit these claim limitations. Likewise, Claims 12-20 are dependent from base Claim 11 and inherit the noted claim limitations.

No combination of the cited references makes obvious the present invention as now claimed. Thus the § 103 rejection of Claims 6-20 is believed to be overcome. Acceptance is respectfully requested.


### **CONCLUSION**

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If

the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

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